Business & Enterprise Systems

Integrity - Service - Excellence

Introduction to Hewlett Packard (HP) Application Lifecycle Management (ALM) v11.0

Current: 14 January 2015

Course Objectives

- **Introduction to the HP ALM Test Tool**
  - **What is HP ALM?**
  - **HP ALM Features**
- **Identify the phases of the Test Management Process**
  - **Specify Release**
  - **Specify Requirements**
  - **Plan Tests**
  - **Execute Tests**
  - **Track Defects**
- **Identify HP ALM Modules & Submodules**
  - **Modules: Dashboard, Management, etc…**
  - **Submodules: Requirements, Test Lab, etc…**

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Introduction to HP ALM

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What is HP ALM?

- **HP Application Lifecycle Management (formerly HP Quality Center) is a web-based test management tool used to structure, organize and document all phases of the application testing process according to your requirements**
- **HP ALM is a central data repository that can be used to store, manage and maintain test data throughout the development lifecycle**
- **HP ALM also facilitates communication and collaboration among key stakeholders**

HP ALM Features

- Provides a repository for all testing assets and provides a clear foundation for the entire testing process
- Establishes seamless integration and smooth information flow from one stage of the testing process to the next
- Supports the analysis of test data and coverage statistics, and provides a clear picture of the accuracy and quality of an application at each point in the lifecycle
- Provides a consistent repeatable process for:
  - Capturing test requirements
  - Planning, developing, scheduling, and executing tests
  - Analyzing test results
  - Managing defects and issues

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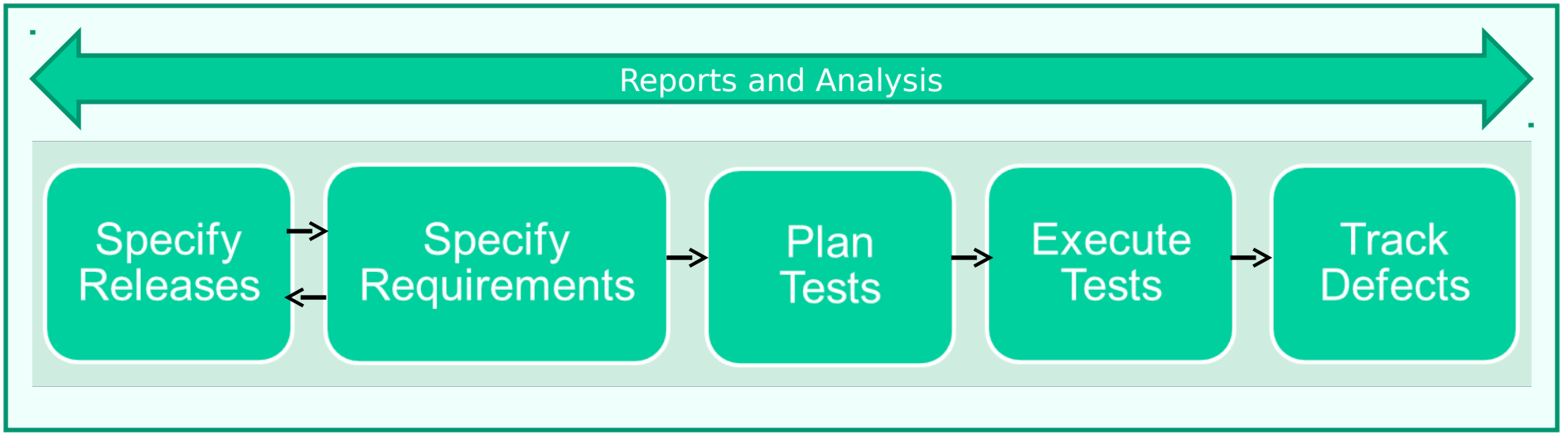
The Test Management Process Using HP ALM

Test Management Process



Test Management Process (Cont'd)

- **Specify Releases (Release Module)**
  - **Develop releases and cycles**
- **Specify Requirements (Requirements Module)**
  - **Analyze the application and document the requirements**

  Note: Version control is mandatory for requirements per the AFPEO BES Process Directory (BPD)
- **Plan Tests (Test Plan Module)**
  - **Create a test plan (which is a library of tests based on the requirements)**
- **Execute Tests (Test Lab Module)**
  - **Create test sets and perform test runs (version specific)**
- **Track Defects (Problem Reports Module)**
  - **Report defects detected in the application and track the remediation process**

Note: Analysis functions are available using each module's reports and graphs features

Specify Releases

- **Organize and Track future releases by defining Releases and Cycles**
  - **Release: Represents a group of new capabilities or changes in an application that will be available for release into production at the same time**
- **Each Release can contain a number of cycles**
  - **Cycles: Represents test phases and test segments for a specific release**
  - **Releases and Cycles have defined start and end dates**
- **Establish Traceability**
  - **Assign Requirements to Releases and Cycles**
  - **Assign Test Sets to Releases and Cycles**
  - **Assign Defects to Releases and Cycles**
- **Analyze Releases and Cycles**
  - **Test progress metrics**
  - **Requirements coverage analysis**

Specify Requirements

- Requirements describe in detail what needs to be solved or achieved to meet the objectives of the application under development
- Clearly and correctly defining requirements at the beginning of a project provides the following advantages:
  - Provides stakeholders guidelines of requirement priorities
  - Sets clear expectations between stakeholders
  - Cuts waste and eliminates unnecessary expenditure of resources
  - Sound basis for project estimation and development

Specify Requirements (Cont'd)

- **Document all Program Requirements**
  - **Ensure Testability**
    - **Objective and Threshold values**
    - **Understandable – Better information yields more-effective testing**
    - **Operability – The better it works, the more efficient the test**
  - **Ensure Traceability**
    - **Create Test Coverage**
    - **Link Requirements to Defects**
    - **Assign Requirements to Releases**
  - **Calculate Risk**
    - **Quantify probability of failure**
  - **Analyze Requirements**
  - **Establish Baseline**

Plan Tests

- Developing a clear and concise test plan is fundamental to successful application testing
- A test plan enables you to assess the capabilities of your application at any point in the software development lifecycle
- Outline a strategy for achieving test objectives
  - How should the application be tested?
  - How much testing will be required?
  - What resources will be required?

Plan Tests (Cont'd)

- Create a Test Plan Tree
  - Organize tests based on function
  - Establish test-to-requirement traceability
  - Link test-to-release and cycles
  - Set up dependencies with test resources
  - Define test parameters and test configurations
  - Create and modify tests and test steps
  - Link a test(s) to a defect if applicable
- Analyze Test Plan data
- Establish a Baseline

Execute Tests

- Create Test Sets and select which test scripts to include in each test set
  - Test Set: Contains a subset of the tests in a project designed to achieve specific goals
  - As your application changes, you run tests (manual or automated) in order to locate defects and assess capability
- Schedule Tests
- Execute Tests (Manually or Automatically)
- Link Tests to Defects (if applicable)
- View and Analyze the Test Results

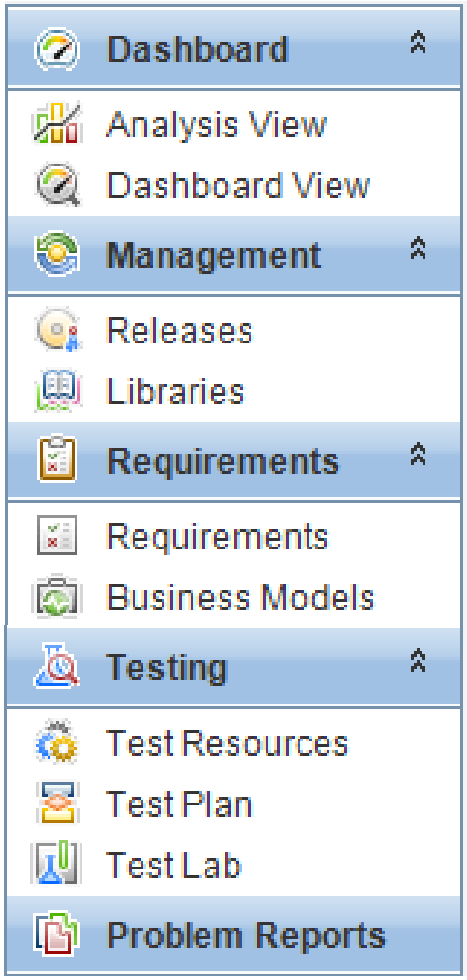
Track Defects

- Locating and repairing application defects efficiently is essential to the development process
- Report design flaws in your application and track data derived from defect records throughout the software lifecycle
  - Create Defects
  - Link Defects and other entities
  - Search for Defects
  - Assign, Repair and Update Defects
  - Analyze Defects

HP ALM Modules & Submodules

HP ALM Modules & Submodules

HP ALM includes five Modules and nine Submodules



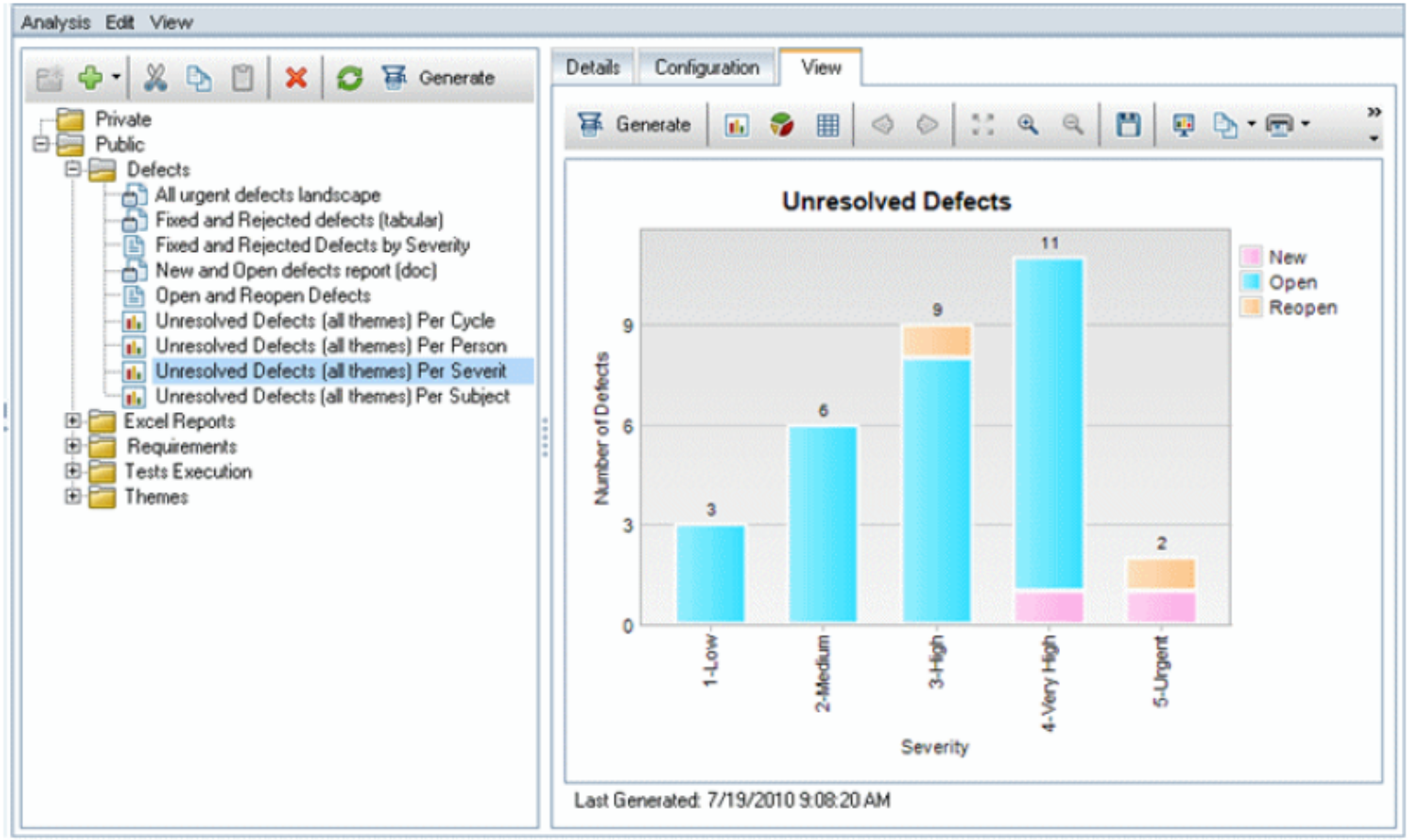
Dashboard Module

The Dashboard Module includes the following Submodules:

- **Analysis View**
  - **Enables you to create graphs, reports, and Excel spreadsheets**
- **Dashboard View**
  - **Enables you to create dashboard pages, where you can view multiple graphs in a single display**

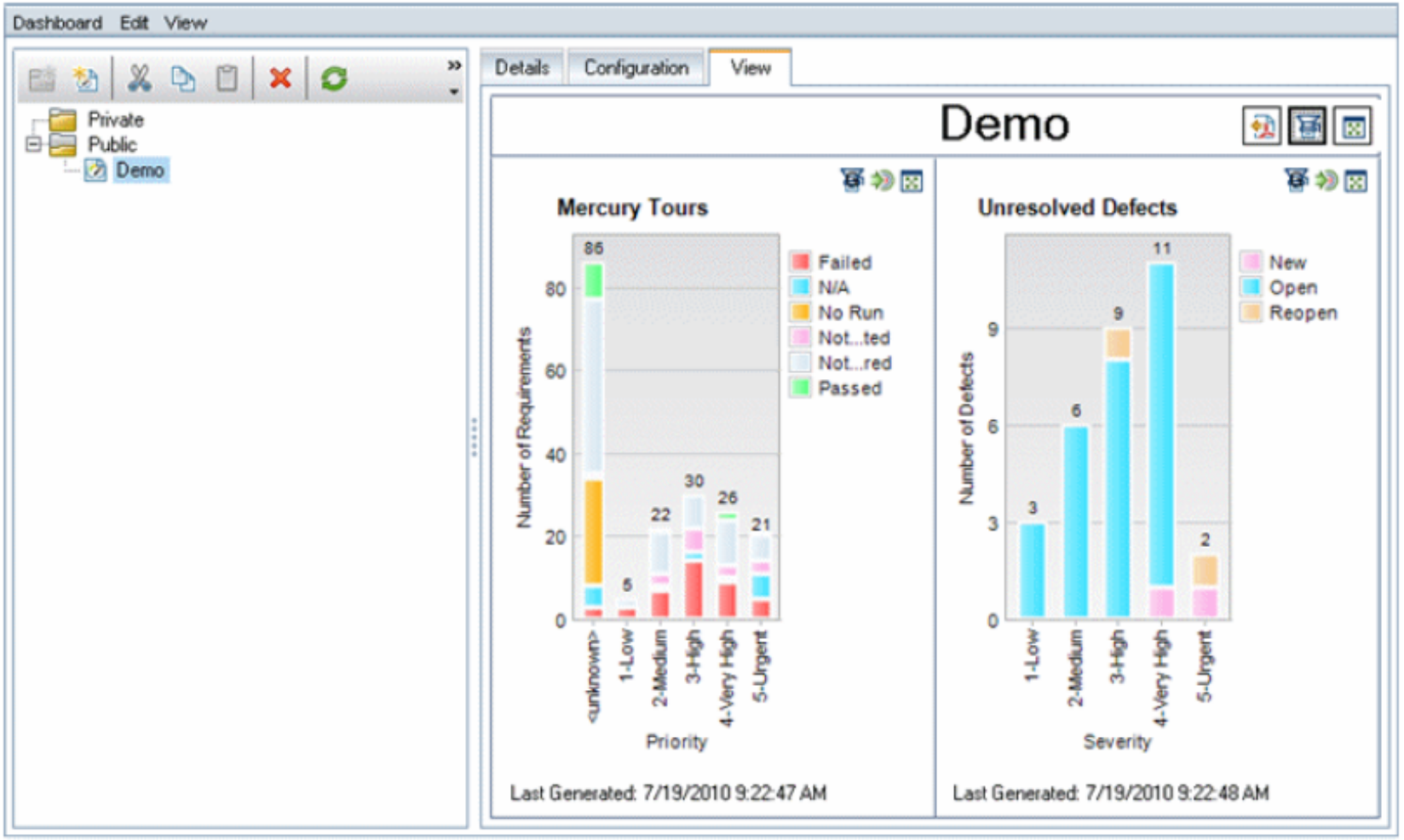
Dashboard Module (Cont'd)

The Analysis View Submodule Window enables you to create, manage and view analysis items (graphs, project reports, Excel reports etc.):



Dashboard Module (Cont'd)

The Dashboard View Submodule Window enables you to create, manage and view dashboard pages:



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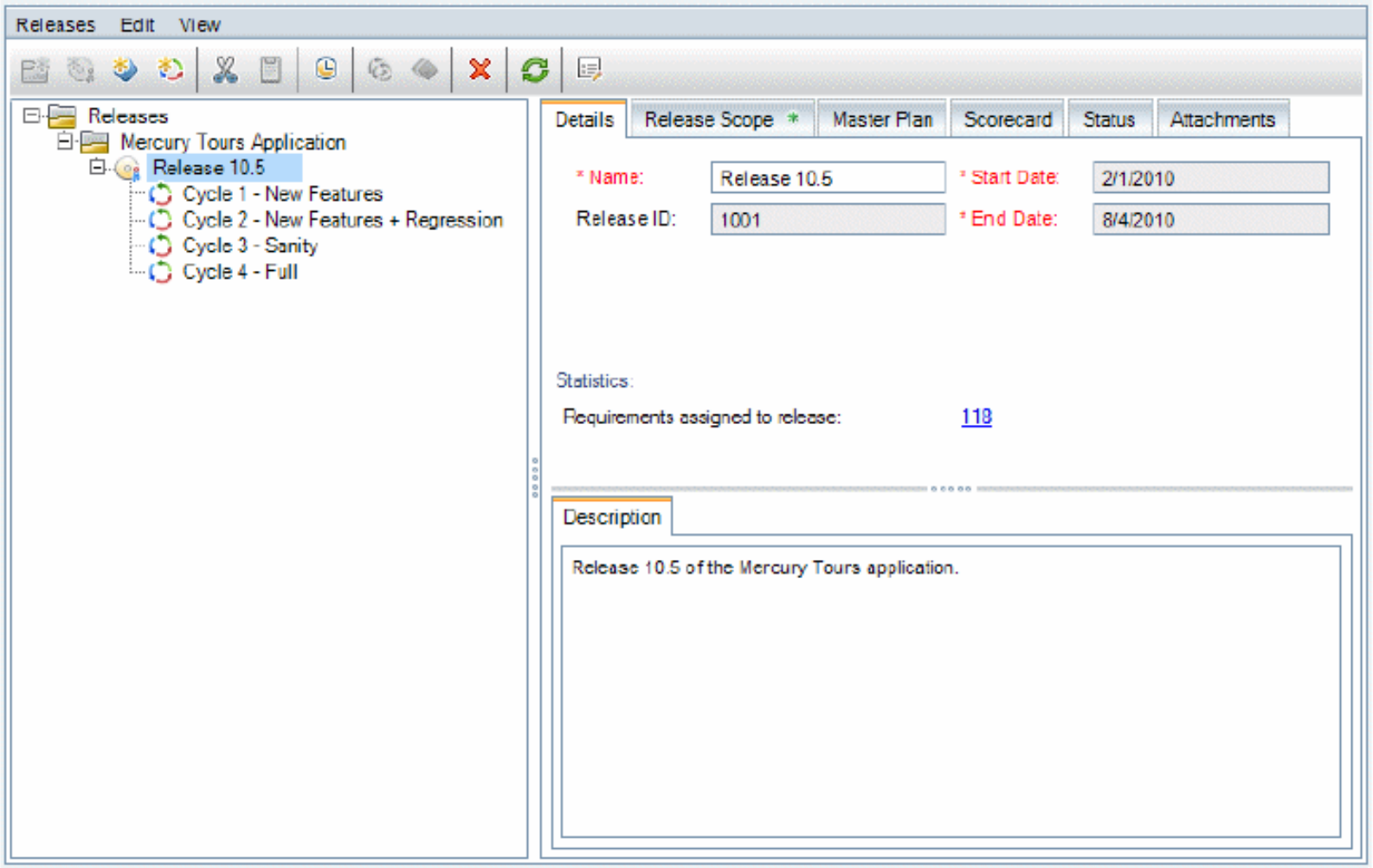
Management Module

The Management Module includes the following Submodules:

- **Releases**
  - **Define releases and cycles for the application management process**
- **Libraries**
  - **Define libraries to track changes in the project**
  - **Reuse entities in a project**
  - **Share entities across multiple projects**

Management Module (Cont'd)

The Releases Submodule enables you to define and track releases and cycles:



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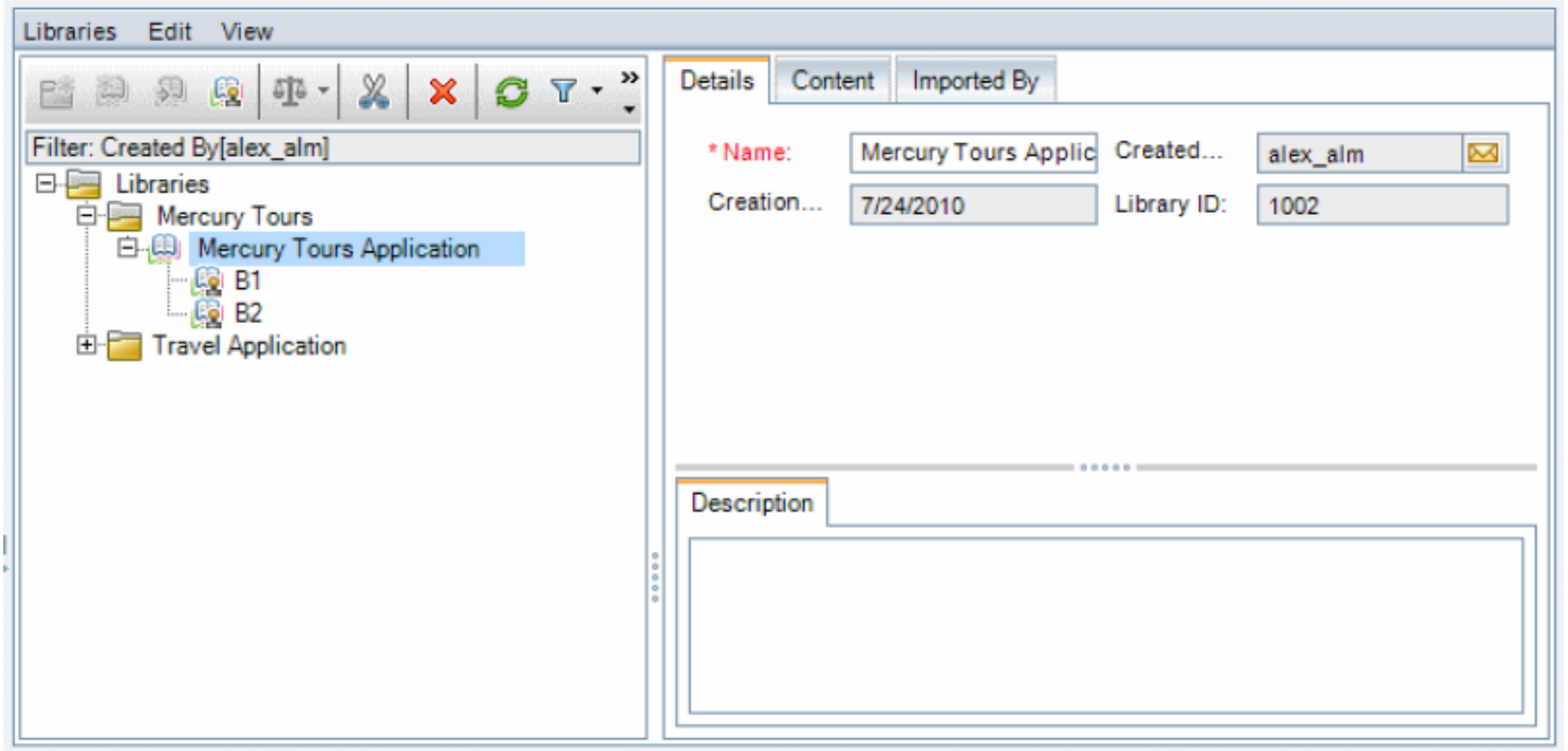
Management Module (Cont'd)

The Libraries Submodule enables you to create and manage libraries and baselines:



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Requirements Module

The Requirements Module includes the following Submodules:

- **Requirements**
  - **Manage Requirements in a hierarchical tree-structure**
  - **Requirements define the scale of testing required**
  - **Link Requirements to other Requirements, Tests or Defects**
- **Business Models**
  - **Design and incorporate business models into business process tests**
  - **Import Business Process Models**
  - **Test the models and their components**

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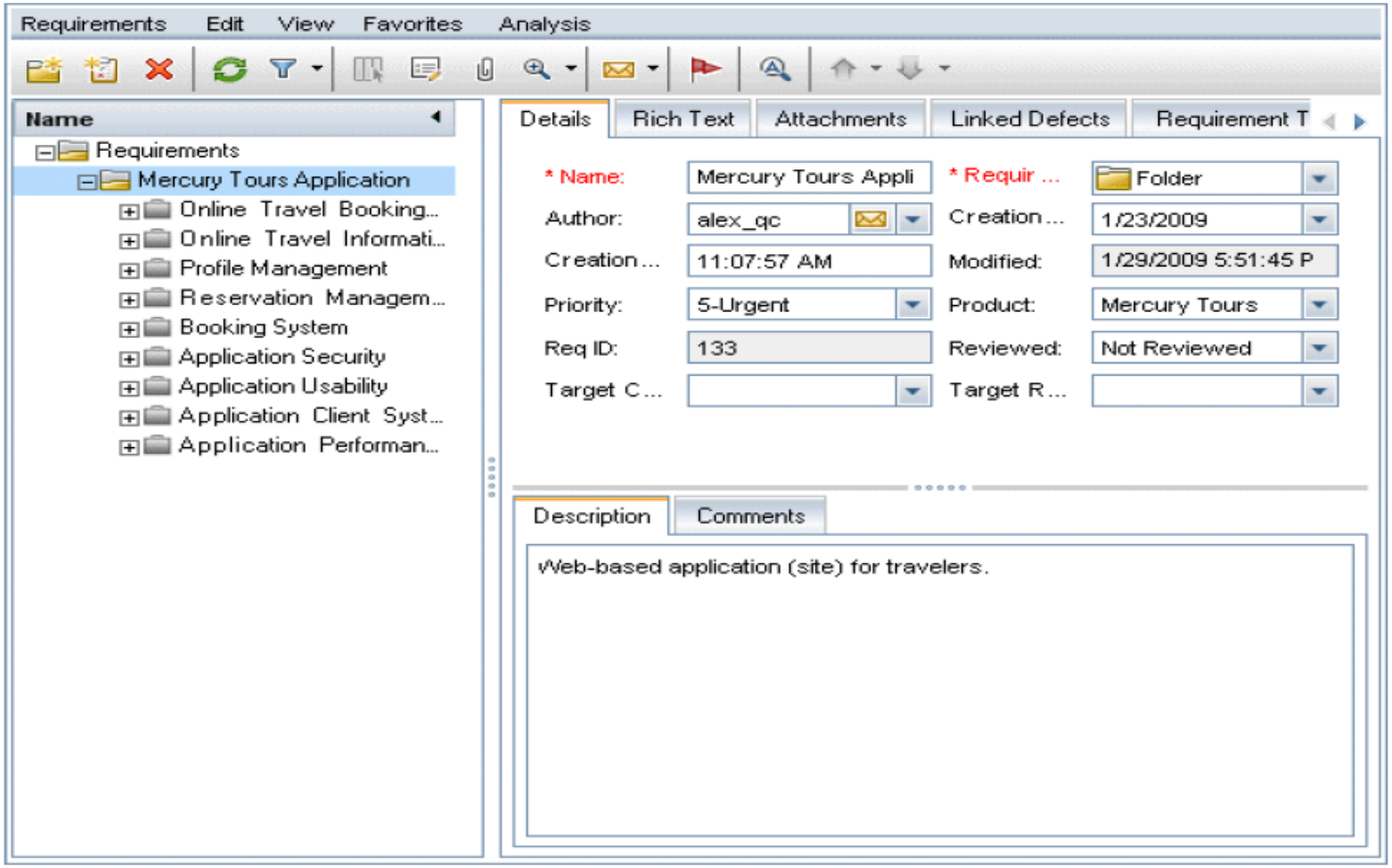
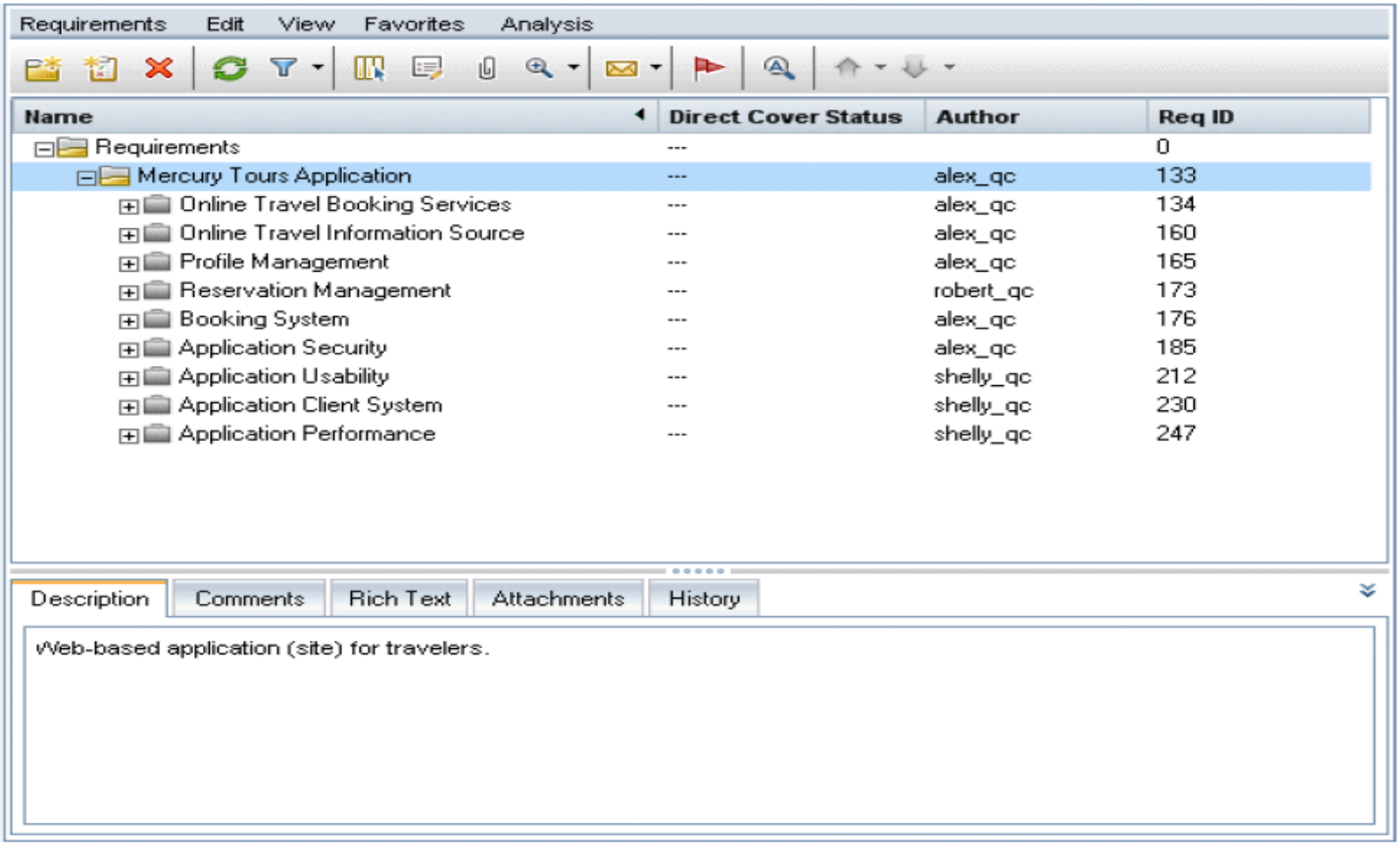
Requirements Module (Cont'd)

The Requirements Submodule Window enables you to create links between requirements and other entities & calculate and analyze requirement risks:



Requirements Module (Cont'd)

The Requirements Tree view enables you to view your requirements hierarchically in a tree:



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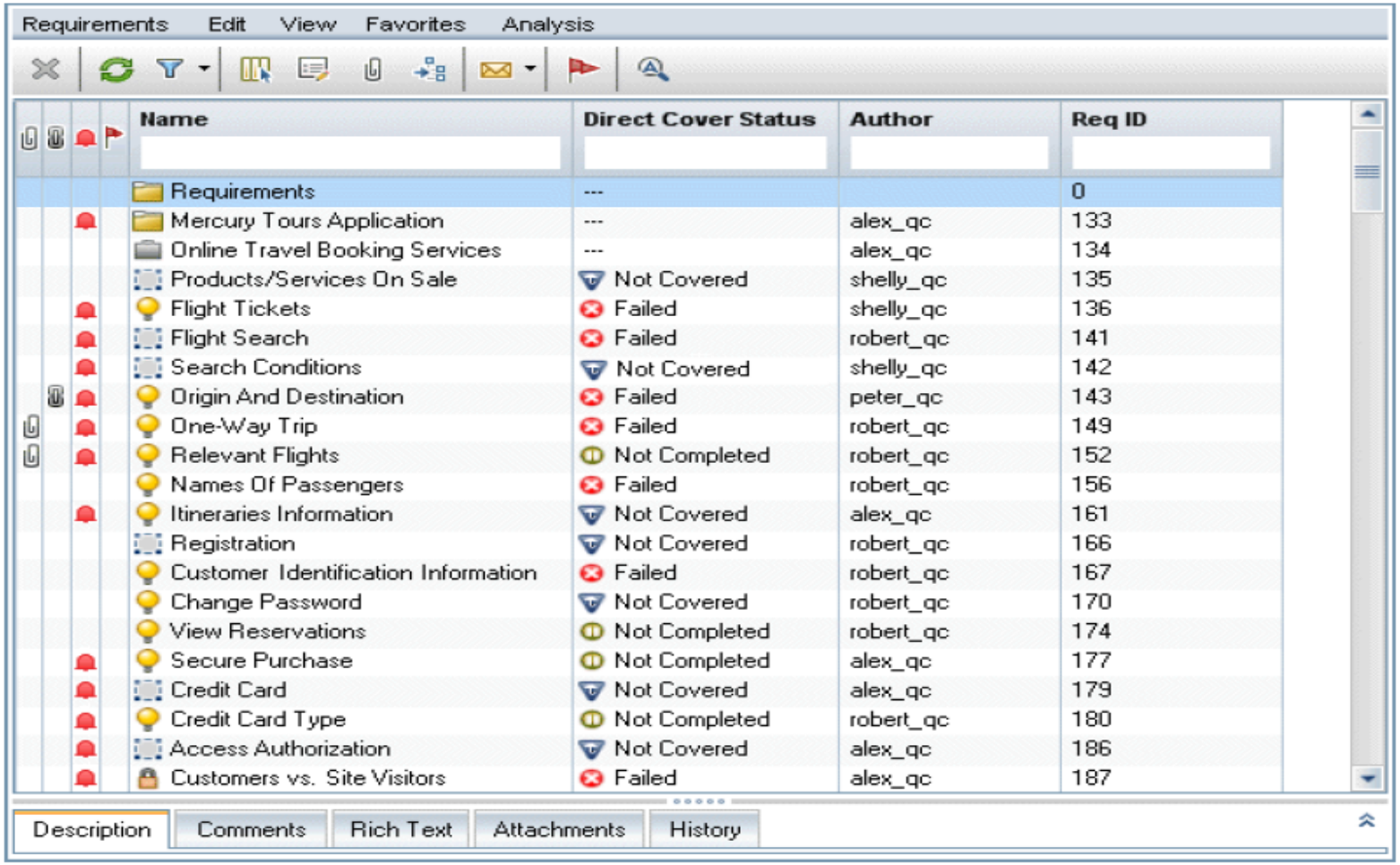
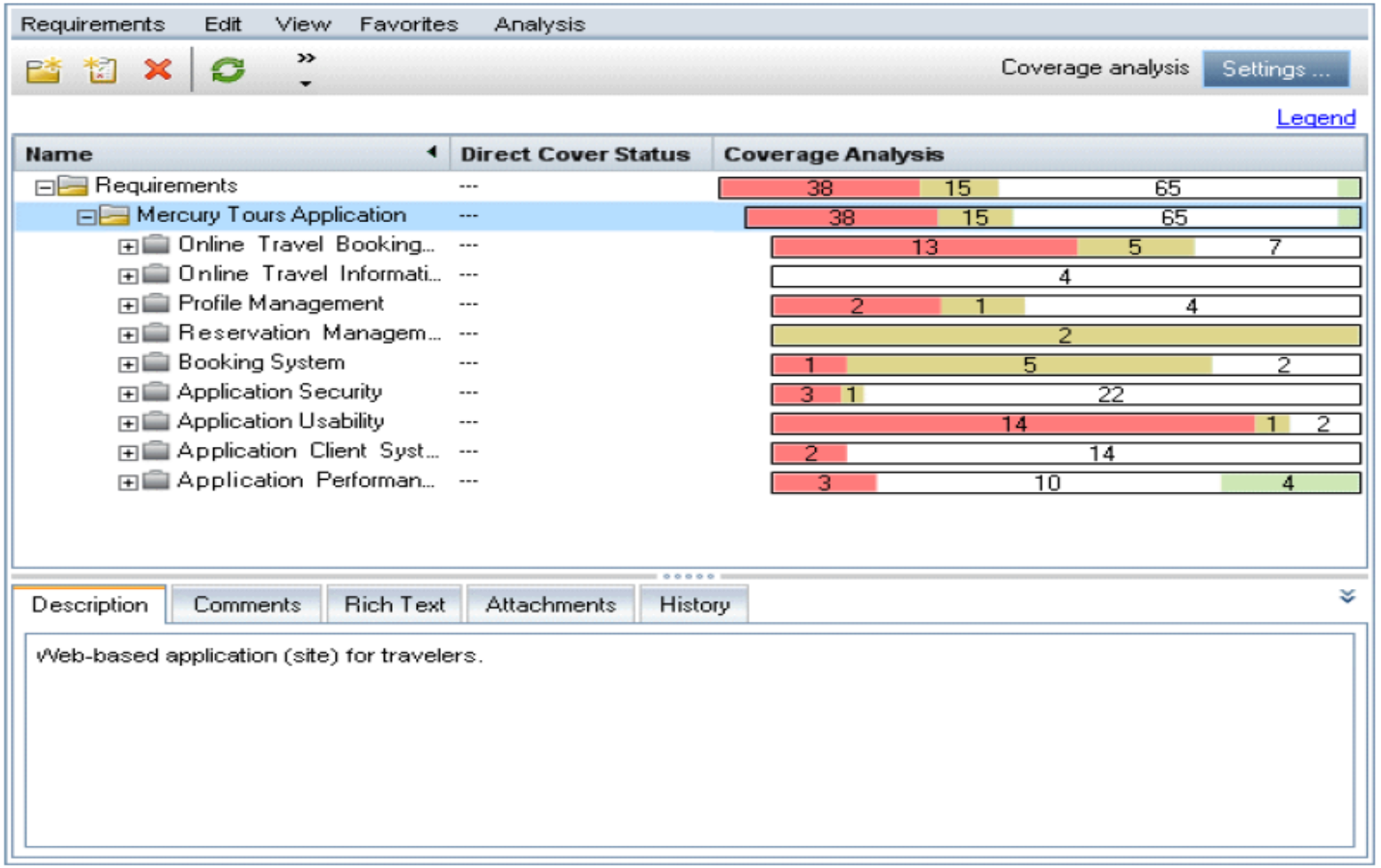
Requirements Module (Cont'd)

The Requirements Grid view enables you to view requirements in a flat non-hierarchical view:


Requirements
Edit
View
Favorites
Analysis
Name
Direct Cover Status
Author
Req ID
Requirements --- 0
Mercury Tours Application --- alex_qc 133
Online Travel Booking Services --- alex_qc 134
Products/Services On Sale Not Covered shelly_qc 135
Flight Tickets Failed shelly_qc 136
Flight Search Failed robert_qc 141
Search Conditions Not Covered shelly_qc 142
Origin And Destination Failed peter_qc 143
One-Way Trip Failed robert_qc 149
Relevant Flights Not Completed robert_qc 152
Names Of Passengers Failed robert_qc 156
Itineraries Information Not Covered alex_qc 161
Registration Not Covered robert_qc 166
Customer Identification Information Failed robert_qc 167
Change Password Not Covered robert_qc 170
View Reservations Not Completed robert_qc 174
Secure Purchase Not Completed alex_qc 177
Credit Card Not Covered alex_qc 179
Credit Card Type Not Completed robert_qc 180
Access Authorization Not Covered alex_qc 186
Customers vs. Site Visitors Failed alex_qc 187
Description
Comments
Rich Text
Attachments
History

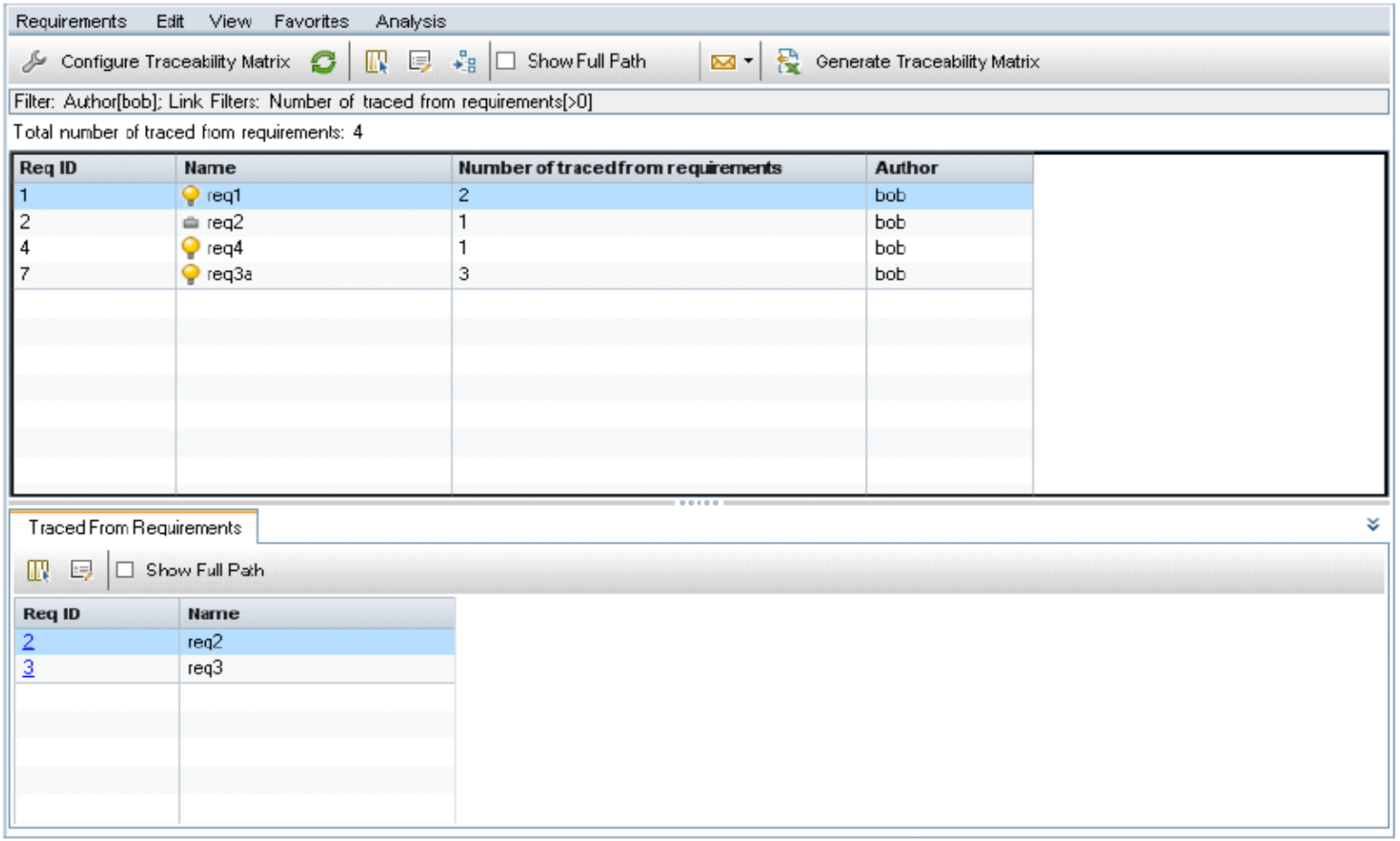
Requirements Module (Cont'd)

The Requirements Coverage Analysis view enables you to analyze the breakdown of child requirements to test cov



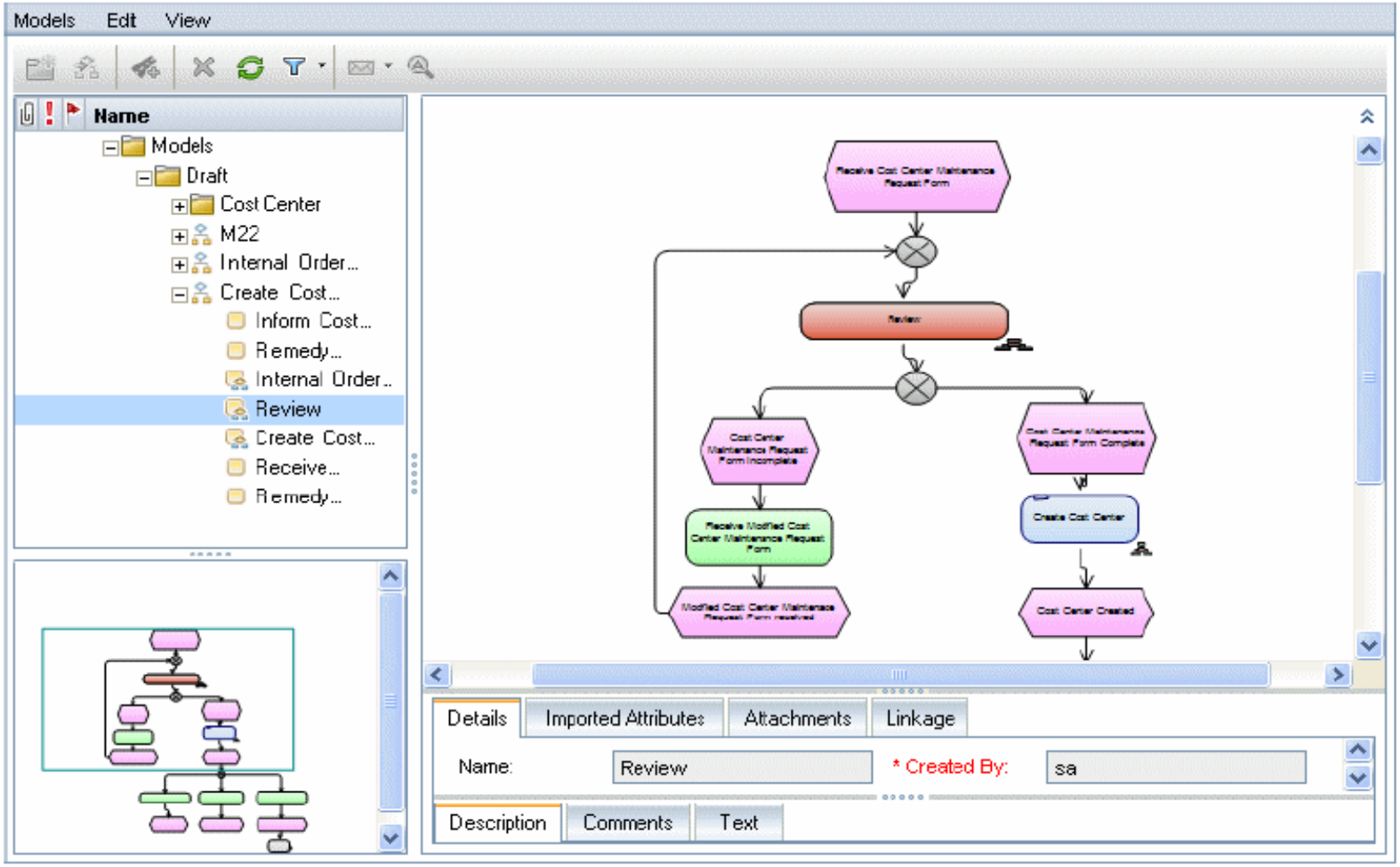
Requirements Module (Cont'd)

The Requirements Traceability Matrix view enables you to view traceability relationships between requirements and other entities in a matrix:


Requirements Edit View Favorites Analysis
Configure Traceability Matrix
Show Full Path
Generate Traceability Matrix
Filter: Author[bob]; Link Filters: Number of traced from requirements[>0]
Total number of traced from requirements: 4
Req ID | Name | Number of traced from requirements | Author
1 | req1 | 2 | bob
2 | req2 | 1 | bob
4 | req4 | 1 | bob
7 | req3a | 3 | bob
Traced From Requirements
Show Full Path
Req ID | Name
2 | req2
3 | req3

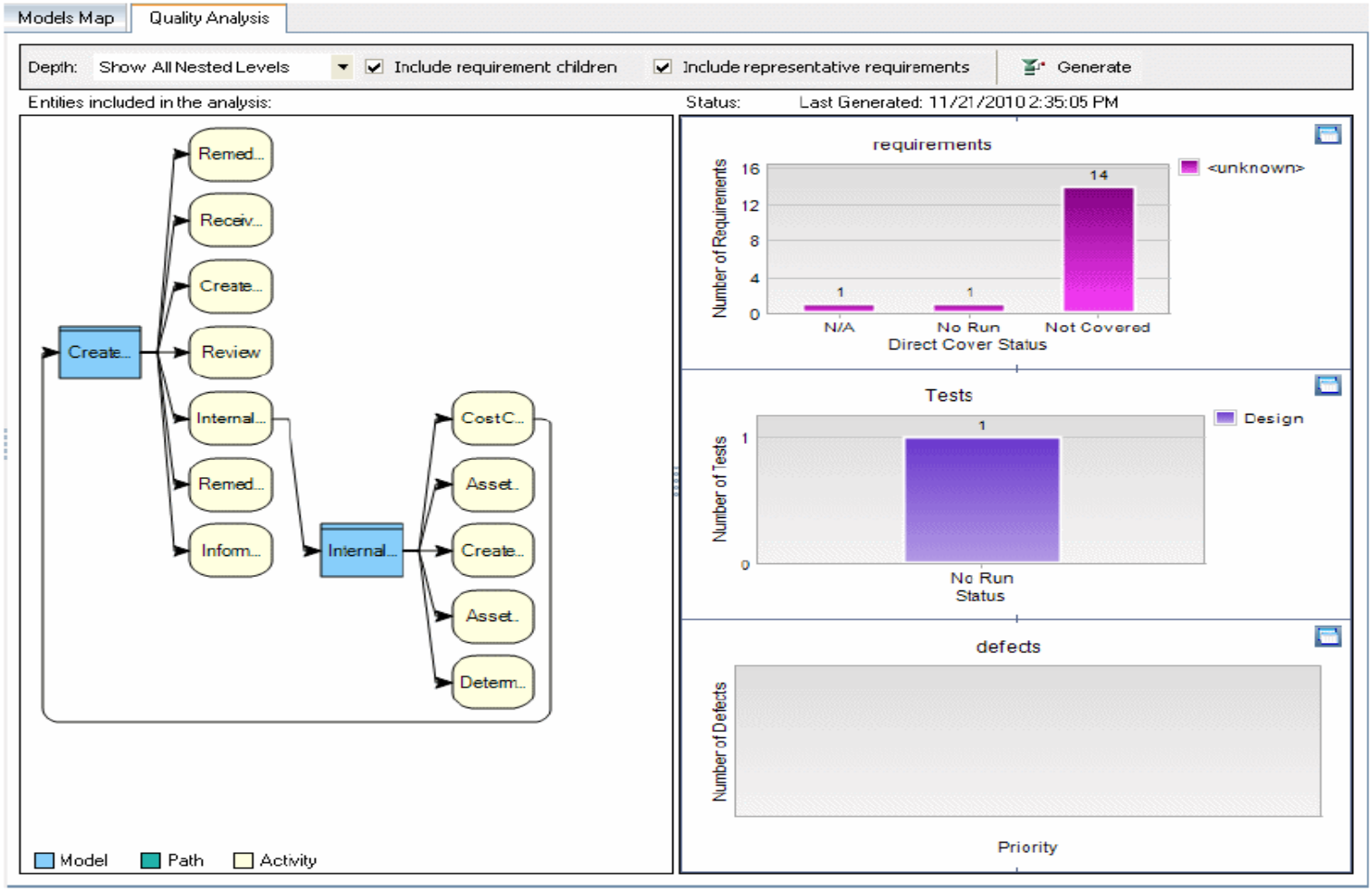
Requirements Module (Cont'd)

The Business Models Submodule Window enables you to define and maintain business process models in HP ALM:



Requirements Module (Cont'd)

The Business Models Analysis view enables you to analyze the quality of business process models, acti



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Testing Module

The Testing Module includes the following Submodules:

- **Test Resources**
  - **Manage resources used by tests**
- **Test Plan**
  - **Create a test plan, based on the requirements defined in the Requirements Module**
- **Test Lab**
  - **Execute the tests on an application and analyze the results**

Testing Module (Cont'd)

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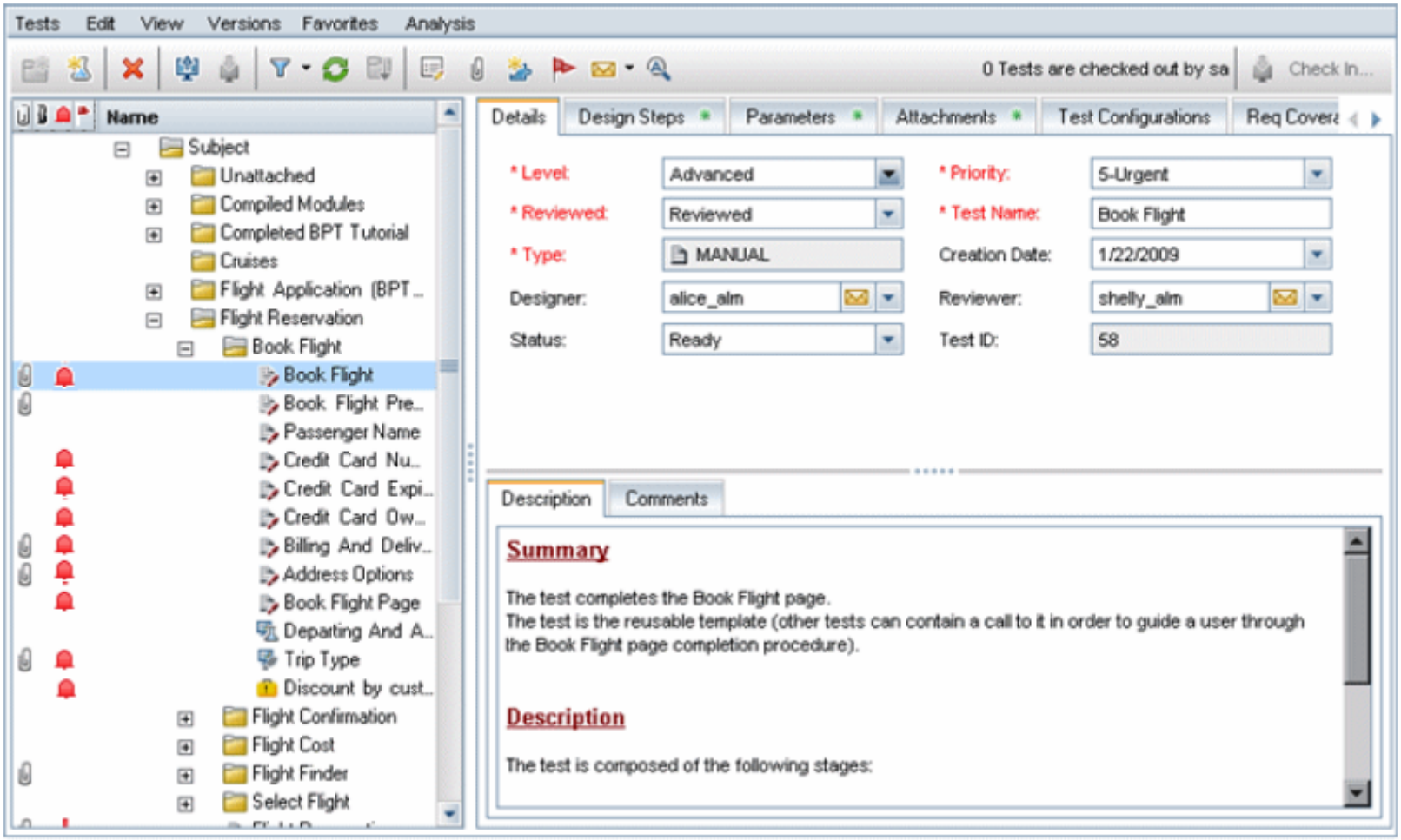
The Test Resources Submodule Window enables you to manage resources used by your tests:



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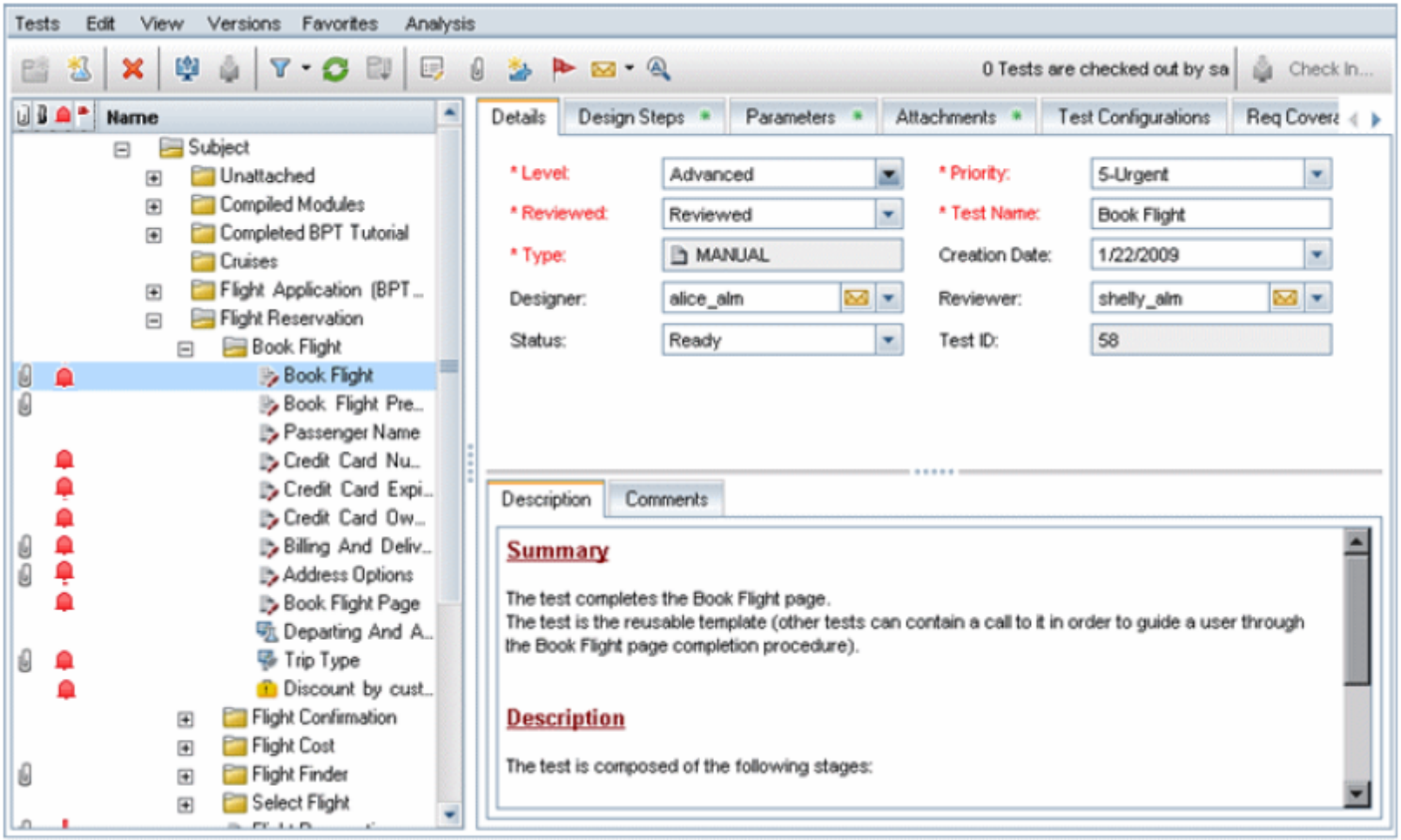
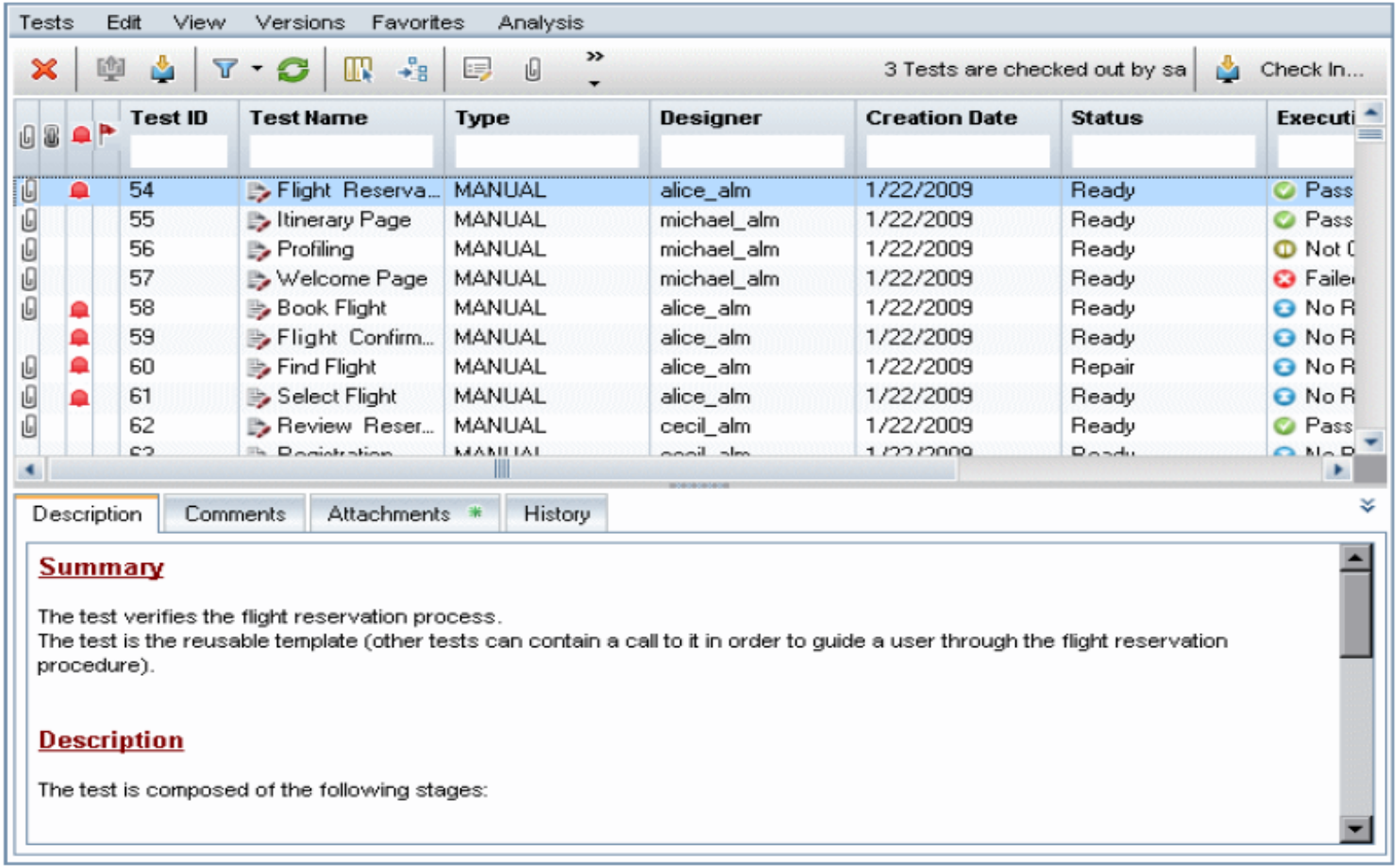
Testing Module (Cont'd)

The Test Plan Submodule Window enables you to define and maintain tests:



Testing Module (Cont'd)

The Test Plan Grid view enables you to view tests in a flat non-hierarchical view:


Tests Edit View Versions Favorites Analysis
3 Tests are checked out by sa
Check In...
Test ID | Test Name | Type | Designer | Creation Date | Status | Executi
54 | Flight Reserva... | MANUAL | alice_alm | 1/22/2009 | Ready | Pass
55 | Itinerary Page | MANUAL | michael_alm | 1/22/2009 | Ready | Pass
56 | Profiling | MANUAL | michael_alm | 1/22/2009 | Ready | Not
57 | Welcome Page | MANUAL | michael_alm | 1/22/2009 | Ready | Faile
58 | Book Flight | MANUAL | alice_alm | 1/22/2009 | Ready | No R
59 | Flight Confirm... | MANUAL | alice_alm | 1/22/2009 | Ready | No R
60 | Find Flight | MANUAL | alice_alm | 1/22/2009 | Repair | No R
61 | Select Flight | MANUAL | alice_alm | 1/22/2009 | Ready | No R
62 | Review Reser... | MANUAL | cecil_alm | 1/22/2009 | Ready | Pass
Description
Comments
Attachments
History
Summary
The test verifies the flight reservation process.
The test is the reusable template (other tests can contain a call to it in order to guide a user through the flight reservation procedure).
Description
The test is composed of the following stages:

Testing Module (Cont'd)

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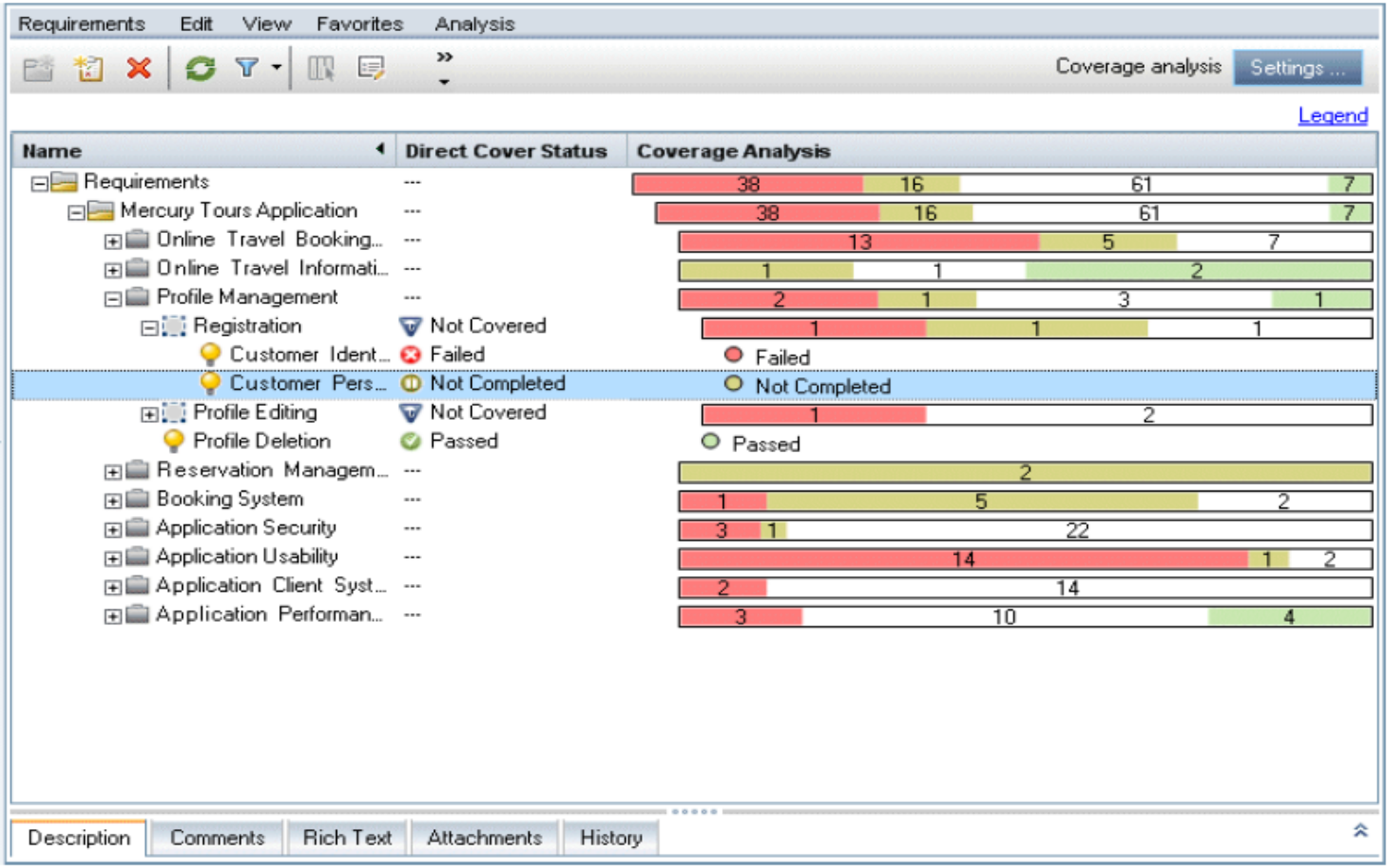
The Coverage Analysis view examines the status of your requirements by displaying the breakdown of child requirements according to test coverage:



Testing Module (Cont'd)

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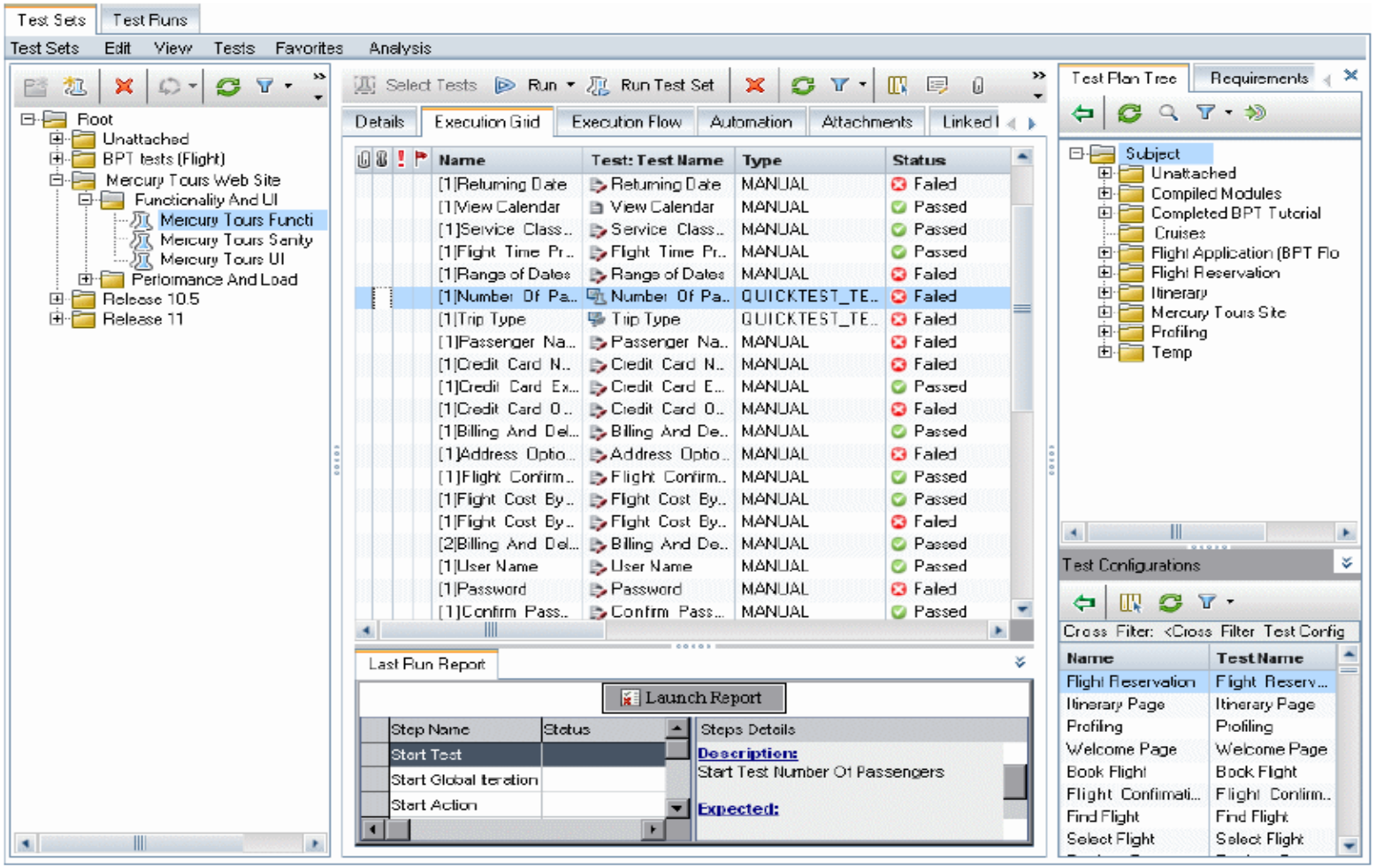
The Test Lab Submodule Window enables you create test sets and perform test runs:



Testing Module (Cont'd)

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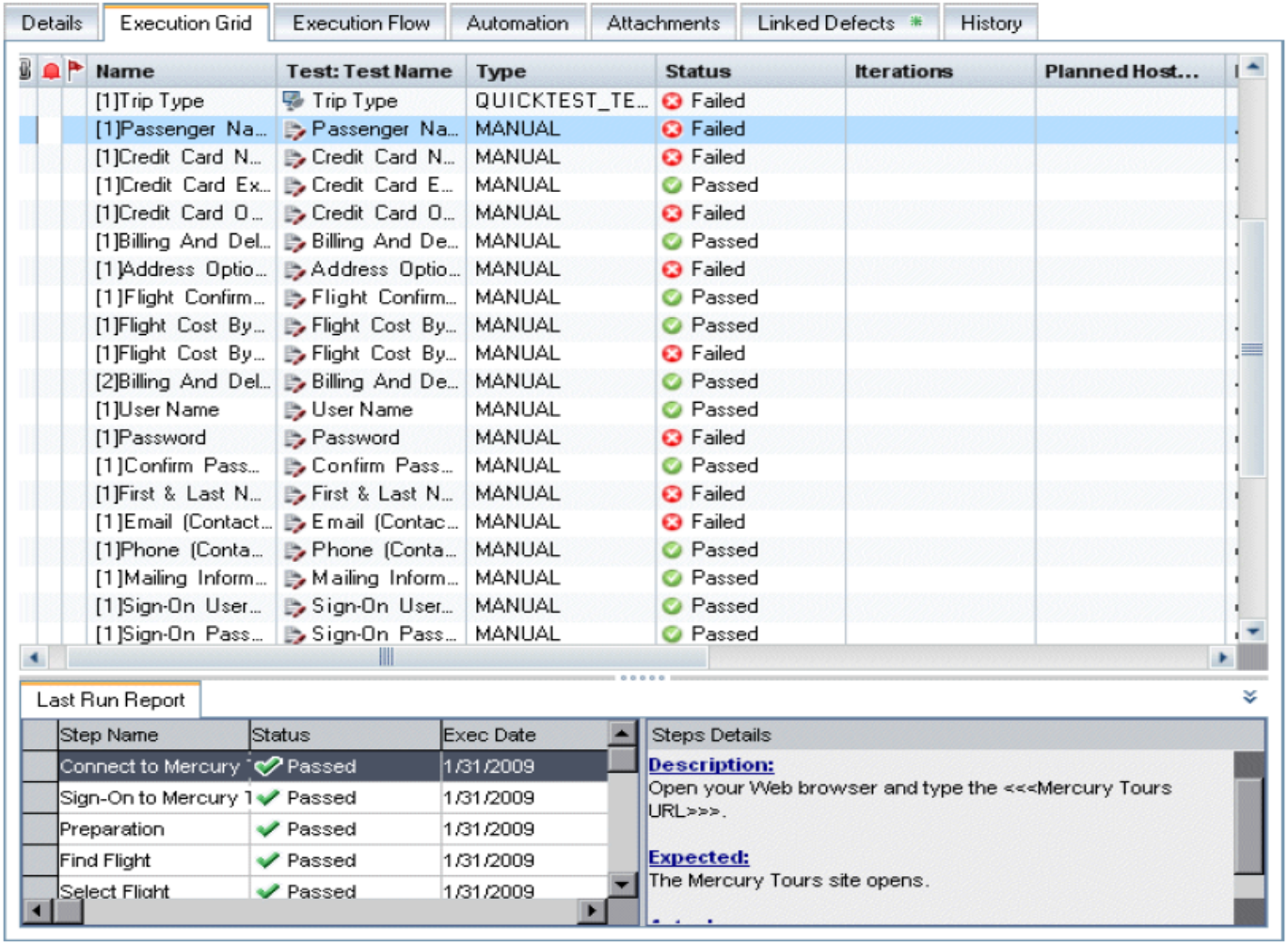
The Test Lab Execution Grid view displays test instance status in a grid:



Testing Module (Cont'd)

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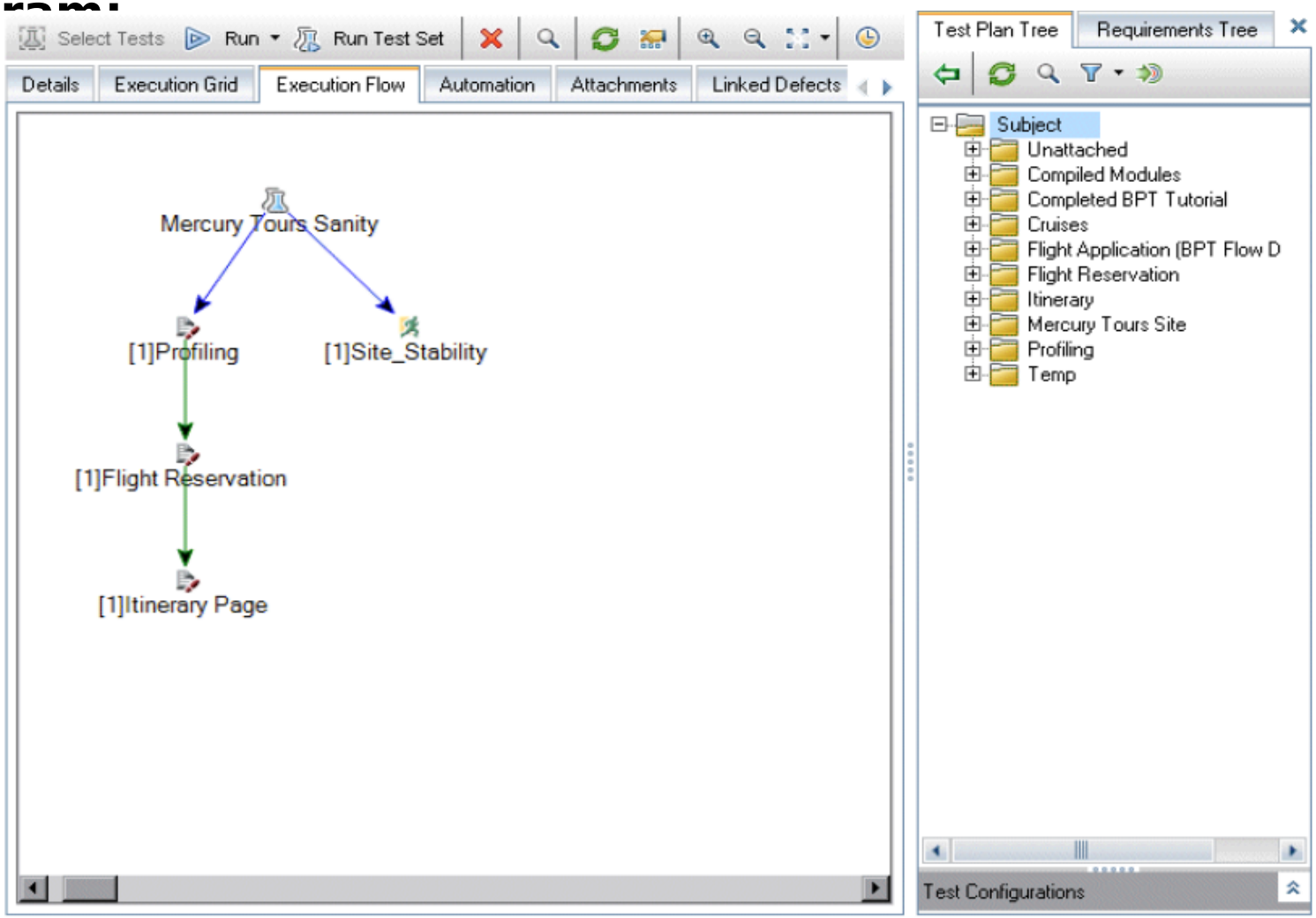
The Test Lab Execution Flow view displays test data in a diagram:



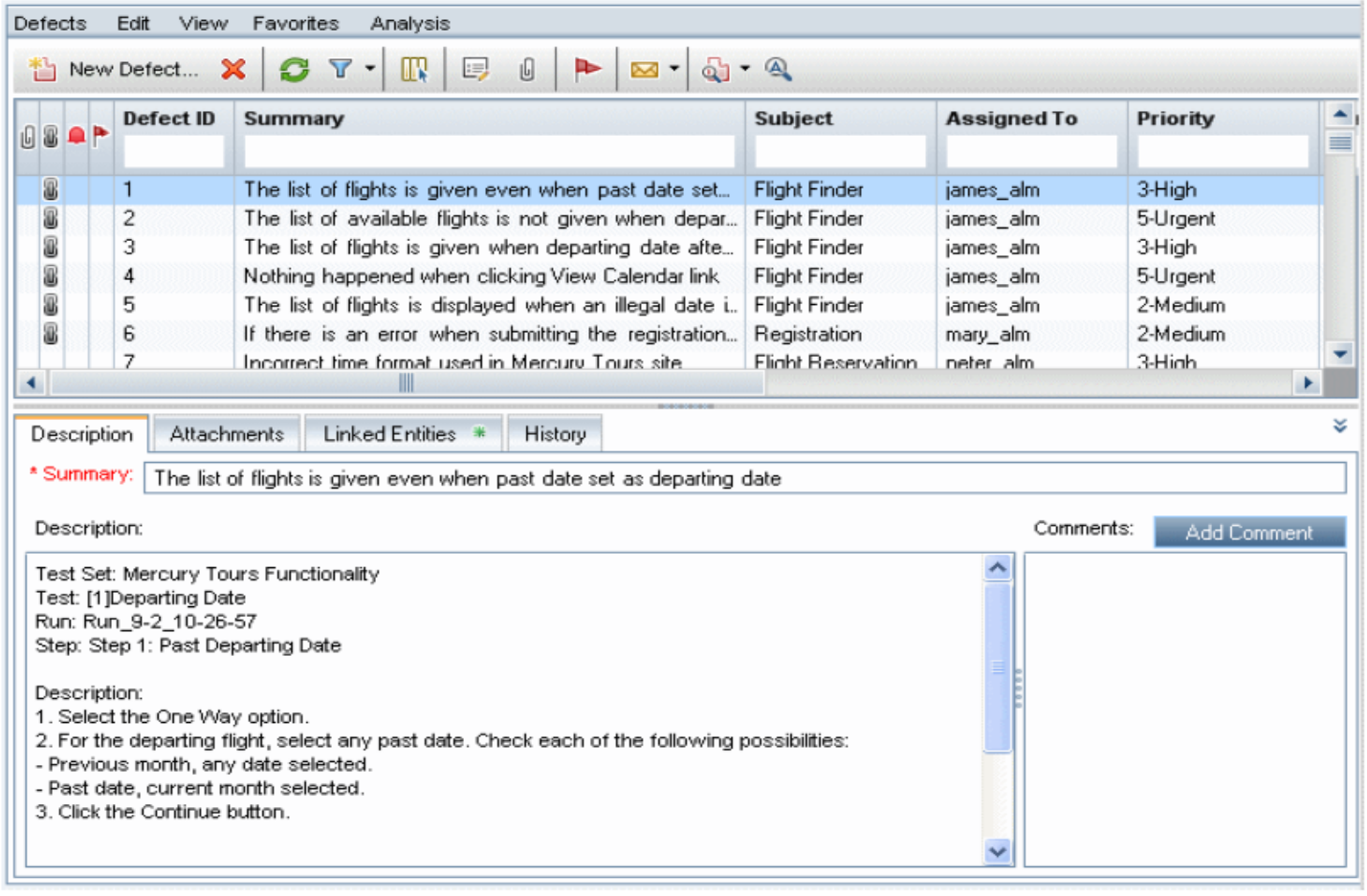
Problem Reports Module

The Problem Reports Module offers the following features:

- **Create Defects**
- **Determine Defect repair priorities**
- **Repair open Defects**
- **Associate Defects with other entities, such as requirements and tests**
- **Manage Defects**
- **Analyze Defect data**

Problem Reports Module (Cont'd)

The Problem Reports Module Window enables you to define and maintain problem reports & organizes and displays the data in a grid:


Defects Edit View Favorites Analysis
New Defect...
Defect ID
Summary
Subject
Assigned To
Priority
1 The list of flights is given even when past date set... Flight Finder james_alm 3-High
2 The list of available flights is not given when depar... Flight Finder james_alm 5-Urgent
3 The list of flights is given when departing date afte... Flight Finder james_alm 3-High
4 Nothing happened when clicking View Calendar link Flight Finder james_alm 5-Urgent
5 The list of flights is displayed when an illegal date i.. Flight Finder james_alm 2-Medium
6 If there is an error when submitting the registration... Registration mary_alm 2-Medium
7 Incorrect time format used in Mercury Tours site Flight Reservation peter_alm 3-High
Description
Attachments
Linked Entities
History
* Summary:
The list of flights is given even when past date set as departing date
Description:
Comments:
Add Comment
Test Set: Mercury Tours Functionality
Test: [1]Departing Date
Run: Run_9-2_10-26-57
Step: Step 1: Past Departing Date
Description:
1. Select the One Way option.
2. For the departing flight, select any past date. Check each of the following possibilities:
- Previous month, any date selected.
- Past date, current month selected.
3. Click the Continue button.

Summary

You have been provided an overview of:

- **Introduction to HP ALM Test Tool**
  - **What is HP ALM?**
  - **HP ALM Features**
- **Identify the phases of the Test Management Process**
  - **Specify Release**
  - **Specify Requirements**
  - **Plan Tests**
  - **Execute Tests**
  - **Track Defects**
- **Identify HP ALM Modules & Submodules**
  - **Modules: Dashboard, Management, etc…**
  - **Submodules: Requirements, Test Lab, etc…**

Recap and Feedback

- **Do you have any unanswered questions?**
- **Did we meet the objectives as stated?**
- **Don’t forget to request your CLPs!**
- **Please fill out a critique so we can improve this class for those who may attend in the future; written suggestions are very helpful**